

Report Information
from Dialog DataStar

Dialog®

Table of Contents

DataStar Documents.....	1
Robust color histogram descriptors for video segment retrieval and identification.....	1
Search Strategy.....	3

Robust color histogram descriptors for video segment retrieval and identification.

Dialog eLinks

Full text options **HSP TO Full Text Retrieval Options**

Accession number & update

0007359440 20070101.

Source

IEEE Transactions on Image Processing, {IEEE-Trans-Image-Process-USA}, May 2002, vol. 11, no. 5, p. 497-508, 18 refs, CODEN: IIPRE4, ISSN: 1057-7149. Publisher: IEEE, USA.

Author(s)

Ferman-A-M, Tekalp-A-M, Mehrotra-R.

Author affiliation

Ferman, A.M., Dept. of Electr. & Comput. Eng., Rochester Univ., NY, USA.

Abstract

Effective and efficient **representation** of color features of multiple **video** frames or pictures is an important yet challenging task for visual information management systems. Key frame-based methods to represent the color features of a group of frames (GoF) are highly dependent on the selection criterion of the representative frame(s), and may lead to unreliable results. We present various histogram-based color descriptors to reliably capture and represent the color properties of multiple images or a GoF. One family of such descriptors, called alpha-trimmed average histograms, combine individual frame or image histograms using a specific filtering operation to generate robust color histograms that can eliminate the adverse effects of brightness/color variations, occlusion, and edit effects on the color **representation**. We show the efficacy of the alpha-trimmed average histograms for **video** segment retrieval applications, and illustrate how they consistently outperform key frame-based methods. Another color histogram **descriptor** that we introduce, called the intersection histogram, reflects the number of pixels of a given color that is common to all the frames in the GoF. We employ the intersection histogram to develop a fast and efficient algorithm for identification of the **video** segment to which a query frame belongs. The proposed color histogram descriptors have been included in the ISO standard **MPEG-7** after extensive evaluation experiments.

Descriptors

FEATURE-EXTRACTION; IMAGE-COLOUR-ANALYSIS; **IMAGE-REPRESENTATION**; IMAGE-RETRIEVAL; IMAGE-SEQUENCES; STATISTICAL-ANALYSIS; **VIDEO-DATABASES**; **VIDEO-SIGNAL-PROCESSING**.

Classification codes

B6135 **Optical-image-and-video-signal-processing***;
B0240Z Other-topics-in-statistics;
C5260D **Video-signal-processing***;
C6160S Spatial-and-pictorial-databases;
C7250R Information-retrieval-techniques;
C1140Z Other-topics-in-statistics.

Keywords

robust-color-histogram-descriptors; **video-segment-retrieval**; **video-segment-identification**; **color-features-representation**; **video-frames**; visual-information-management-systems; key-frame-based-methods; group-of-frames; selection-criterion; color-properties; **video-sequences**; data-structure; alpha-trimmed-average-histograms; color-**representation**; **video-segment-retrieval-applications**; intersection-histogram; pixels; efficient-algorithm; fast-algorithm; query-frame; ISO-standard; **MPEG-7**.

Treatment codes

T Theoretical-or-mathematical;
X Experimental.

Language

English.

Publication type

Journal-paper.

Availability

SICI: 1057-7149(200205)11:5L;497:RCHD; 1-L.

CCCC: 1057-7149/02/\$17.00.

Publisher identity number: S1057-7149(02)04778-4.

Digital object identifier

10.1109/TIP.2002.1006397.

Publication year

2002.

Publication date

20020500.

Edition

2002033.

Copyright statement

Copyright 2002 IEE.

((c) 2009 The Institution of Engineering and Technology)

Search Strategy

No.	Database	Search term	Info added since	Results
1	INZZ	mpeg-7 AND descriptor AND representation AND video	unrestricted	10

Saved: 13-Jan-2009 10:17:11 MET